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Molecular characterization of gut microflora in *Rhyzopertha dominica* (Fabricius) (Coleoptera: Bostrichidae) and *Tribolium castaneum* (Herbst.) (Tenebrionidae: Coleopetera) populations of South India

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The lesser grain borer, *Rhyzopertha dominica* (Fabricius.) and the red flour beetle, *Tribolium castaneum* (Herbst.) are major and cosmopolitan pests of stored grains and grain products in India. High level of resistance towards phosphine was recorded from samples colleted in South India. Studies were carried out to explore the relationship between the phosphine resistance and endosymbiots hosted by the *R. Dominica* and *T. Castaneum* if any. The molecular characterizations of endosymbionts present in 30 and 35 different geographical populations of *R. dominica* and *T. castaneum* with FD1 and RP2 (16S rDNA primers) endosymbiont specific primers. PCR amplification using the respective 16S rDNA primers and sequencing the respective amplicons revealed the presence of gammaproteobacteria in *T. castaneum* and Non-diaspididae associated bacteria in *R. dominica* samples. In the present study, there was no significant correlation between the phosphine resistance and the endosymbionts hosted by the test insects towards the contribution in the processes of degradation of xenobiotics.

Keywords: Rhyzopertha dominica, Tribolium castaneum, endosymbiont, non-diaspididae, gammaproteobacteria.

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